REMARKS

After amendment, claims 1-4, 6-42, 47-48 and 55-62 remain pending in the present application, claims 5, 43-46 and 49-54 having been cancelled. The amendment to claim 1 is made to primarily to address the Examiner's 35 U.S.C. §112, first paragraph rejection of the previously pending claims. Claim 5 has been cancelled and incorporated into amended claim 1 and claim 62 has been added to reflect the claims which were discussed with Examiner Pratt during a telephonic interview of May 11, 2009. No other amendment has been made to the instant application to place the application in condition for allowance. No new matter has been added to the application by way of the present amendment.

The undersigned attorney wishes to acknowledge the courtesy of Examiner Pratt in conducting a telephonic interview with the undersigned on May 11, 2009, to discuss the allowability of subject matter in the present application and narrowing the issues to be considered as prosecution continued. The Examiner indicated that potentially favorable consideration of an independent claim which contained the limitations of then-pending claims 5-7 could be made in determining the patentability of the present invention. Applicant presents amended claim 1 to incorporate the limitations of claim 5 (the claim 6 limitations fall within the ranges which are already present in previously pending claim 5), and the limitations of claim 7 have been incorporated into new 62. Applicant respectfully submits that the newly presented claims are now patentable and distinguish over the art of record. Applicant respectfully submits that the present invention distinguishes over the teachings of the prior art and submits the further declaration of Mr. Neil Thomas Paulett in support of the patentability of the present invention.

The Examiner has variously objected to or rejected the original claims of the instant application under 35 U.S.C. §112, first paragraph (written description) and §103 for the reasons stated in the March 9, 2009 office action. Applicant shall address each of the Examiner's rejections in the sections which follow.

The 35 USC § 112, First Paragraph Rejection

The Examiner has rejected claims 1-42, 47-48 and 55-61 under 35 U.S.C. §112, first paragraph as failing to comply for the reasons which are presented on page 2 of the March 9, 2009 office action. In response, Applicant has amended claim 1 by removing the offending language. It is respectfully submitted that amended claims 31 and 51 now meet the requirements of 35 U.S.C. §112, second paragraph.

The 35 USC § 103 Rejection

The Examiner has rejected original claims 1-4, 8-42, and 47-48 under 35 U.S.C. § 103 variously over "A survey on the composition of mineral water and identification of natural mineral water" ("Luk") in view Someya, U.S. patent no. 4,540,584 ("Someya"), Tuffley, international patent publication WO02/00043 ("Tuffley"), Lindon, U.S. Patent no. 4,325,975, Mehansho, et al., U.S. patent no. 7,090,878 (Mehansho) and Dyrr, et al., international patent publication WO 01/52672 ("Dyrr"), for the reasons which are stated in the March 9, 2009 office action on pages 2-7. Separately, the Examiner has rejected original claims 55-61 under 35 U.S.C. §103 variously over the above-referenced publications as applied to claims 1-4 and 8-52, further in view of Jakubowiz, DE Publication 19700368 ("Jukobowiz") for the reasons which are set forth in the March 9, 2009 office action on page 7.

As presented in the following paragraphs, Applicants respectfully submit that the presently claimed invention is non-obvious and patentable over the teachings of the cited references. In the first instance, it is shown that the prior art does not teach or suggest the present invention. Secondly, the attached further declaration of Neil Thomas Paulett, provides documentary evidence which shows unequivocally that the teachings of the prior art references do not render the present invention unpatentable and the Examiner's arguments that the present invention represents a mere optimization of the teachings of the prior art are simply not cogent enough to maintain the rejection of the present invention as set forth in the amended claims.

The Deficiencies of the Prior Art

The deficiencies of the prior art in failing to render the present invention obvious have been detailed at great length in previously filed papers and those summations are referenced here in addressing the Examiner's rejection. The Examiner states that Luk provides the composition of about 60 mineral water samples and takes the position that Luk discloses amounts in group a and b of the present invention within the claimed amounts except for phosphorous, elemental levels of which are not measured. The Examiner states that in connection with the lack of reference to phosphorous in Luk, Someya discloses that it is known to make a beverage from coral sand, which contains phosphorous.

The examiner further points to the disclosures of Tuffley, Mehansho, Lindon and Dyrr to provide further evidence of the obviousness of the present invention. In particular, the Examiner states that all of the minerals of groups a and b of the present invention are disclosed in those references. Further, the Examiner argues that "The particular amounts are seen as being within the skill of the ordinary worker" and "the discovery of an optimum value of a result effective variable is ordinarily within the skill of the art", citing *In re Boesch.*

The Examiner further states that "In developing a water product containing minerals, properties such as taste and nutrition are important. It appears that the precise ingredients as well as their proportions affect the taste and nutrition of the product, and thus are result effective variables, which one of ordinary skill in the art would routinely optimize."

The Examiner also states that in the case of new recipes or formulas for cooking foods which involve the addition or elimination of common ingredients "... do not amount to invention .." " .. there is nothing patentable unless the applicant .. further establishes a co-action or cooperative relationship between the selected ingredients which produces a new, unexpected, and useful function."

It is the examiner's assessment that in the instant invention "Each ingredient is used for its known function. Nothing has been shown as to a co-action of ingredients that produce anything new or unexpected." Adding particular amounts of ingredients to make a beverage taste good is within the skill of the ordinary worker as this is a method of trial and error. Therefore, it would have been obvious to make a beverage containing known minerals in particular amounts as shown by the combined references."

In response, Applicant provides the following, evidencing that the present invention, as set forth in pending claims 1-42, 47-48 and 55-61, is clearly non-obvious over the cited prior art. As argued, the prior art does not teach or suggest the particularly claimed combination of minerals, which give rise to favorable organoleptic/taste characteristics which are not known and not taught by the prior art. Indeed, the art cited by the Examiner completely misses the fact that the taste qualities of mineral water can be influenced by the mineral concentration in the water. This is unexpected. Indeed, a fair reading of the art suggests that one of ordinary skill should not and would not address the problem of taste through mineral concentration, but rather through the inclusion of additives, which are known traditionally, to influence taste.

Minerals are known to impart an unpleasant taste. (see page 2 lines 16 - 17 of the present specification). Indeed, Tuffley teaches one of ordinary skill that it is generally considered that providing a range of elements to an individual for health purposes involves the ingestion of an unpleasant tasting supplement (see page 1 line 16 - 17). To overcome the unpleasant taste, the art has typically included a flavouring agent to mask the unpleasant taste (see page 3 line 24 to 30). Mehansho, also cited by the Examiner, refers in column 1 lines 49 - 56 to "problematic organoleptic properties associated with such minerals, such as significant off-flavors." As such, Mehanso evidences the difficulty of the problem which the present invention solves.

It is asserted by Applicant that the unpleasant flavor of minerals is well known and is a hallmark of the prior art teachings. However, prior to the present invention, additive compounds are used to mask the unpleasant taste (see page 2 lines 17 - 18 - sugars, acids and flavours of the

present specification.). Tuffey tells us at page 1 lines 25 to 28 low pH improves palatability. Tuffey pp. 2 line 24 refers to the use of flavouring agents to mask the unpleasant tasting vitamins or minerals. Mehansho, also cited, uses arabinogalactan fibers to mask the taste. Additionally, Mehansho states at column 17 lines 62-64, that "One or more flavoring agents are recommended for the embodiments of the present invention in order to enhance their palatability."

Mehansho refers to a means of alleviating the adverse flavor impacts of zinc and iron by providing a reducing environment. Thus, it can be seen that there is a general mechanism available for neutralizing the adverse taste effects of these two elements. We also note (as indicated above) that Mehansho recommends that a flavoring agent be used, in addition to the reducing environment.

In contrast to the prior art teachings, the present invention teaches that a balance of elements that may typically on their own be poor tasting can result in a desirable tasting beverage (mixture). None of the citations show this balancing, or motivate this approach, because of the complete failure of the prior art to even recognize the present invention. In contrast to the present invention, each of the prior art citations uses a completely different factor (i.e., other than element balancing), to achieve the result of a taste masking or off-taste neutralising agent. It is thus not demonstrated, nor is it shown to be part of the knowledge of the skilled artisan, to balance off two or more elements (let alone seven elements) to achieve a taste balance. There is simply no recognition or motivation from the cited art to provide the present invention as claimed.

The present inventor has achieved the taste balancing by first devising a classification for the principal relevant component parts of taste (set out in table 1), and secondly determining (as shown in part in table 4) for each element the impact that variations in concentration have on the taste components.

The motivation for devising the classification of the component parts of a mineral water

is on the assumption that it was not heretofore known that it is possible to achieve a mineral balance that provides a superior taste. The aim of the taste classification set out in table 1 is to define those taste components that are principally responsible for taste perceptions in mineral waters. It is to be noted that several elements cumulatively effect any given taste component. The present invention does not exemplify mere optimization, but considerable discovery deserving of patent protection.

Applicant submits that there is no disclosure or suggestion in the prior art cited of the composition as claimed in the instant claims. Moreover, there is no disclosure of a multi-elemental mineral water with defined levels of the multiple (at least seven) elements to co-operatively balance the taste components of each of the elements such that an acceptable, even superior tasting drinking water is achieved.

Luk, not only does *not* disclose the levels of phosphorous but only discloses levels of potassium which fall outside of the levels claimed by the present invention. There is therefore positive evidence that amongst this set of mineral waters of the prior art not one has the proportional elemental composition as defined in the claims of the present invention. That is further evidence of the non-obviousness of the present invention.

None of the other citations disclose the composition as claimed either. There is no disclosure that a superior or even acceptable taste can be achieved by balancing the mineral content of a mineral water and accordingly there is absolutely no motivation to combine any of Someya, Tufley, Lindon, Mehansho and Dyrr, with one or more of the compositions disclosed in Luk to add phosphorous or appropriate levels of potassium in the amounts claimed and thereby achieve a better tasting mineral water solely by balancing the minerals used, because the benefits of combining one or more minerals to achieve a balance taste has not been disclosed or suggested.

There is no disclosure in any of the citations which elements contribute to given

particular taste components, to enable cumulative balancing of the mineral water concerned. It is submitted that the present invention as claimed is thus more than simply varying the concentration and thus, the taste intensity of any single element, rather it is varying the relative concentrations of elements in a manner to cooperatively build an acceptable flavor in the manufactured mineral water. This is neither disclosed nor understood by the prior art cited. Given those deficiencies of the art, motivation is absent.

In contrast to the Examiner's contention, the inventor's efforts represents much more than merely an exercise in trial and error (i.e., optimization). It is noted that in the present invention, as claimed, each of at least *seven* different elements is optimized against *six* others at varying concentrations in order to provide the present invention. The possible permutations of variable concentrations is enormous and without the guidance of the impact each of the elements has on the relevant taste components as claimed in the present invention (by virtue of the amounts) it is inconceivable that varying respective concentrations for each element leads to a taste optimization.

It is respectfully submitted that the combination of the disclosures in Luk on the one hand, and Someya, Tuffley on the other hand, do not lead one of ordinary skill to the present invention as claimed. Luk does not disclose any mineral water that is within the range specified by the present claims. This is admitted by the Examiner, who states that "the reference Luk discloses amounts in group 1 (sic a) and b within the claimed amounts except for phosphorous (p311). Moreover, none of the waters examined by Luk disclose potassium in the ranges claimed.

The Examiner asserts that it would be obvious to add phosphorous because the addition of phosphorous is disclosed in Someya. Applicant respectfully disagrees. Applicant submits that the combination of Luk and Someya does not arrive at the composition of claim 1. Moreover, Applicant points out that there is no motivation to add phosphorous to any one of the

compositions set out in Luk. There was, prior to the present invention, no indication that the overall composition of the defined manufactured mineral water required the presence of phosphorous in the amount defined in claim 1 let alone *any amount*. If one were to add finely divided coral sand to the composition of Luk to achieve phosphorous concentrations within the amounts defined in claim 1, the calcium levels would be well outside of the range specified (they are present at levels of about 50% in coral). This is further described in the attached declaration of Neil Thomas Paulett, discussed hereinbelow.

Turning to Someya, Someya does not teach a manufactured water that contains phosphorous present in the range of 15 to 80 mg/L. It is unclear as to what amount of the finely divided coral sand may be added to one of the mineral waters disclosed in Luk to provide a mineral water of the present invention. Furthermore, it is unclear as to which mineral water in Luk should form the basis of that combination. Notwithstanding that limitation, even assuming an approach to combine the teachings of Someya and Luk in a light most favorable to the Examiner's position, as explained in the attached declaration, that combination clearly does not suggest or even obliquely motivate the present invention.

In Tuffley, only calcium is included within the presently claimed range; chlorine is low, magnesium is high, sodium is low, silicon is low and potassium is low. Applicant also wishes to point out that phosphate is provided as Ca Glycerine Phosphate , of which there is less than 200ug/g phosphate. That makes the elemental concentration of phosphate very low and much less than the concentration defined in claim 1. Again it is unclear how this combination leads to the claimed invention- it is respectfully submitted that it does not.

Given the deficiencies of the teachings of the prior art, it is respectfully submitted that pending claims 1-42, 47-48 and 55-61 are clearly non-obvious over the combined teachings of the prior art.

The Further Declaration of Neil Thomas Paulette

As further evidence of the patentability of the present invention, Applicant submits the additional declaration of Neil Thomas Paulett, which further points to the non-obviousness and patentability of the present invention over the cited prior art.

As set forth in his declaration (attached), Mr. Paulett has assessed the taste components of five further compositions prepared by the inventor of the present invention. Samples #1 and #3 contain the group A elements in the proportions claimed in claim 4, and the group B elements as claimed in claim 6. Sample # 1 has no group C and no group D elements, whereas sample #3 has group C elements as set out in claim 8 and the group D element as set out in claim 10. As can be seen from the enclosed declaration of Neil Paulett, both sample #1 and sample #3 have an acceptable taste, and that elements of group C and group D are not essential for an acceptable tasting mineral water. However, inclusion of group C and D elements enhances the taste of the mineral water to provide a superior taste.

As set forth in the attached Paulett declaration, sample #2 and sample #4 have group A elements in amounts as set out in claim 3 and group B elements as set out in claim 5, but not within the most preferred amounts as provided in samples #1 and #3. Sample #4 additionally has the group C and D elements in amounts set out in claims 8 and 10. As shown in the attached Paulett declaration, the addition of C and D elements varies the assessment of some of the taste components (see, for example "mouthfeel sensation" and "mineral sensation") but these elements do not have the same impact as with a comparison of samples #1 and #3. It is thus submitted that the group C and D minerals are desirable to have in the claimed mineral water compositions, but they are not essential.

As presented in the declaration, sample #5 is identical to sample #3 except for the amount of phosphorous. The amount of phosphorous added is that amount which is taught by Someya,

taking the amount of phosphorous in sample C of Table 1 and the one exemplified disclosure of a drinking water in Someya, i.e., Example 1 of Someya which provides a composition containing 20% coral sand. The quantity of phosphorous present in the Someya composition is thus 0.138 grams/L, which converts to 138mg/L. The quantity of phosphorous claimed in the present invention is between 20 to 65 mg/L and in sample #3 30mg/L is present. The teachings of Someya are therefore clearly outside of the range of the present composition.

As discussed in the attached declaration, the composition (sample #5) which contains the Someya teachings (i.e., a concentration of phosphorous well outside the presently claimed range) evidenced that the addition of phosphorous in quantities/concentrations disclosed and taught by Someya adversely impacts taste. This stands in contrast to the present invention.

Thus, the facts presented in the further declaration of Neil Thomas Paulett clearly evidences that the present invention is non-obvious over the teachings of the art. There is simply no basis to conclude that the Someya teachings, which do not provide any teaching or suggestion that the concentration of phosphorous within the range set forth in the claims of the present application provides an understanding, acknowledgement or motivation to provide the presently claimed compositions based upon the teachings of the prior art.

Further Comments Regarding Particular Statements Made by the Examiner in the Office Action of March 9, 2009

It is noted at page 9 of the present Office Action, that the Examiner counters Applicant's position that it is now known to balance two or more elements to achieve a taste balance by stating that what is generally done in making a food product, is to use acid to balance the alkaline taste of certain minerals.

"It is not that it doesn't matter about the various amounts, but that it is within the skill of

the ordinary worker to determine the particular amounts of ingredients. . . Just as in making any recipe the particular amounts are determined by how the product tastes, and absent anything unobvious or a co-action of ingredients, it would have been obvious to add particular amounts of ingredient to make a good tasting product."

Applicant responds in saying that such is applicable where the components of a recipe/composition impact taste in a manner that is known because the components have been used in an enormous number of combinations and the combination of such components are very well known. The taste impact of salt, sugar and flavorings is well understood and these are almost intuitively adjusted in recipes.

In the case of minerals, some of the flavour impacts of some of the minerals are known such as iron or calcium; however, for others, such as silicon, potassium or phosphorous, they are not. That is evidenced further by the art cited by the Examiner. Moreover, the impact on flavour of combinations of minerals is generally not known; certainly not as well as in the case of ingredients for foods and thus, mineral concentrations are not capable of being adjusted intuitively or otherwise routinely optimized. Indeed, the adjustment of levels up or down has much greater uncertainty.

The Examiner further states "When the Examiner states that nothing is shown that phosphorous affects the taste of the product. However, this reference is combined with other references to show that it is known to add phosphorous to mineral waters. "

It is Applicant's position that in combing two documents, there has to be a perceived reason for adding an individual element. The examiner states that nothing is shown that phosphorous affects the taste of the product. 1) If that is so, then Applicant sees no motivation to add the element, because it is unnecessary. 2) However, the current declaration by Neil Paulett clearly demonstrates that phosphorous does have a substantial impact on taste, to the extent that

should the amount disclosed in Someya be added to a mineral water, then taste is very much adversely affected. It is submitted that either in the case of 1) or 2), cited above, there is no motivation to combine Someya with Luk. Indeed, there is simply no basis to add something to a mineral water if it adversely affects the taste, or adjust the concentration of a mineral where there is nothing to suggest that altering the amounts of phosphorous might improve the overall flavour. The tradition response would be to add another component, for example, such as a flavor or sugar.

In the case of phosphorous Applicant fails to see that adding the phosphorous as taught in Someya to one of the mineral waters of Luk provides the present invention. The present invention is clearly patentable over the teachings of the prior art.

The Rejection of Claims 55-61

The Examiner has rejected original claims 53-61 under 35 U.S.C. §103 as being obvious over the above-cited references as applied to previously pending claims 1-4 and 8-52 as described above, and further in view of Jakubowicz, DE19700368 ("Jakubowicz"). The Examiner cites the above-references for teaching the invention of original claims 1-4 and 8-52, as indicated above. The Examiner cites Jakubowicz for teaching the dilution of beverages such as orange juice or dried beverage compositions and that it would therefore be obvious to add concentrated mineral solutions to dilute beverages to any concentrations. The Examiner therefore concludes that the invention of claims 55-61 is obvious over a combination of the teachings of the art. Applicant respectfully traverses the Examiner's rejection.

Applicant respectfully submits that a combination of the references as suggested by the Examiner would not render the present invention obvious. As discussed in great detail hereinabove, a combination of Luk, in view of Someya, Tufley, Lindon, Mehansho and Dyrr does not disclose or suggest the invention of claims 1-4 and 47-52. Given those deficiencies and the

silence of Jakubowicz as to any of the features of the claimed invention other than the inclusion of citric acid in a beverage, it is respectfully submitted that claims 55-61 are also non-obvious. It is respectfully submitted that the deficiencies of the prior art in failing to disclose or suggest the present invention are simply not obviated by a reference, Jakubowicz, which is silent as to most aspects of the present invention of claims 1-4 and 8-52, for the reasons which are presented in great detail with reference to the newly submitted Declaration of Neil Thomas Paulett, and is relevant only to certain features of the claimed invention of pending claims 55-61. Moreover, Jakubowicz says nothing whatsoever about mineral concentration and its impact on taste and the specific mineral combination otherwise set forth in the amended claims. Jakubowicz, peripherally relates to the subject matter of claims 55-61, but does not address anything specific about mineral concentration which would obviate the clear deficiencies of the other prior art references, does absolutely nothing to strengthen the Examiner's arguments that claims 55-61 and indeed, all of the claims of the present application, are patentable. Germane to the question of patentability is the impact that mineral concentration has on the taste of a mineral water composition. Jakubowicz is completely unhelpful in this regard. Without more, the teachings of Jakubowicz ring hollow and provide no further support to the Examiner's rejection. It is respectfully submitted that the teachings of Jakubowicz do not make the Examiner's rejection any more cogent and Applicant respectfully submits that the present invention is patentable over the cited prior art. Accordingly, favorable consideration is respectfully requested.

For all of the above reasons, it is respectfully submitted that the present application is now in condition for allowance and such action is earnestly solicited. One claim (claim 5) has been cancelled and no claims have been added. No fee is therefore due for the presentation of this amendment. A petition for a one month extension of time is enclosed as is the appropriate fee. Small entity status continues to apply to the present application.

The Commissioner is authorized to charge any fee or credit any overpayment to deposit account 04-0838.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450, on July 9, 2009.

Henry D. Coleman